Attorney Docket No. P65728US0
Serial No. 09/601,037

REMARKS/ARGUMENTS

Applicants wish to thank the Examiner for marking the Office Action to acknowledge, both, the claim to §119 priority based on SI 9800058 and receipt of the certified copy.

Claims 43-63 are presented hereby in place of claims 21-42, canceled hereby without prejudice or disclaimer.

Presented claim 43 corresponds to claim 30, i.e., dependent claim 30 incorporated into independent claim 21. Presented claims 44-63 correspond to claims 22-29 and 31-42, respectively revised to depend directly or indirectly on claim presented claim 43. Present claims 60, 61, and 62, further, revise claim 39, 40, and 41, respectively, in order to more clearly define the invention.

As an initial matter, the Office Action evidences error in claim construction. Specifically, it is alleged in the Office Action that claims 39-41 do not include the limitations of the claims from they (directly and indirectly) depend, i.e.: "The claims [39-41] are considered to be directed to a housing, an end fitting, and a collecting element of general applicability" (Office Action page 6). This allegation is, of course, incorrect: "A claim in dependent form shall be construed to incorporate by reference all the limitations of the claim to which it refers." 35 USC 112, paragraph 4. The Examiner is not free to ignore the statutory requirements for claim interpretation. Claims 39-41 must be construed to include "all of the limitations" of the claims from which they depend, directly and indirectly. 35 USC 112, ¶4.

While the aforesaid allegation and, therefore, the manner of interpreting claims 39-41 as set forth in the Office Action are incorrect, changes in claim language are reflected in corresponding

replacement claims 60-62, which represent more typical U.S. patent practice format Additionally, presented claim 62 recites that the components A and B and the collecting elements form a concentric assembly, as described in the present specification (page 12, last paragraph).

By the instant Amendment all of the pending claims (claims 43-63) are limited to subject matter of claim 30; i.e., present claim 43, upon which all of the remaining (pending) claims are dependent, represents claim 30 written as an independent claim. Therefore, all but one of the six rejections of record are rendered moot by the instant Amendment.

Claim 30 (represented by present claim 43) is not among the claims rejected by five of the six rejections set forth in the Office Action: (1) the rejection under 35 USC 102(b) based on each of Saxena and Litle, (2) the rejection under 35 USC 103(a) based on each of Saxena and Litle, (3+4) the two rejections under § 103(a) based on the combined teachings of Josic, Frechet, Afeyan, and Litle, and (5) the rejection under § 103 based on the combined teachings of Josic, Frechet, Litle, Afeyan, and Saxena. All of the presented claims contain the subject matter of claim 30, as explained above. As such, the aforesaid rejections of record under § 102(b) and § 103 (a), none of which rejected claim 30, are not applicable against the present claims and, thus, are rendered moot by the instant amendment.

The only rejection applied against claim 30 is the rejection under 35 USC 103(a) based on the combined teachings of Josic, Frechet, and Afeyan. As explained, below, the rejection of claim 30 cannot be sustained and, as such, is not applicable against presented claims 43-63.

To establish *prima facie* obviousness of a claimed invention, all the claim limitations must be taught or suggested by the prior art. *In re Royka*, 490 F.2d 981, 180 USPQ 580 (CCPA 1974). "All words in a claim must be considered in judging the patentability of that claim against the prior art." *In re Wilson*, 424 F.2d 1382, 1385, 165 USPQ 494, 496 (CCPA 1970). When conducting an obviousness analysis, "all limitations of a claim must be considered in determining the claimed subject matter as is referred to in 35 U.S.C. 103 and it is error to ignore specific limitations distinguishing over the [prior art] reference." *Ex parte Murphy*, 217 USPQ 479, 481 (PO Bd. App. 1982).

Josic, figure 3, shows an arrangement of three concentric cylindrical structures, i.e., a porous (separating-matrix) tube 2, sandwiched between inner, sample collector 1 and outer, sample distributor 3 (Josic, page 5, 4th ¶, and page 13, 1st full ¶)).

According to the statement of rejection, the porous tube 2 in Josic Fig. 3 fully meets claim 30 (i.e., the subject matter of present generic claim 43) except "in reciting use of two [porous] components and use of a multimodal pore size distribution" (Office Action page 2). In other words, Josic is alleged to differ from claim 30 (and present claim 43) as follows:

§ 103(a) rejection	
Claim 30 – "porous . . . tube"	Josic Fig. 3 – "porous tube 2"
. . . *at least two-concentrically arranged tube-like components*	a **single**-component tube

§ 103(a) rejection	
Claim 30 - "porous . . . tube"	Josic Fig. 3 - "porous tube 2"
. . . *components comprise a* ***uniform multimodal pore size distribution***	No disclosure of pore size or pore distribution.

The two features of claim 30 missing from Josic allegedly would have been obvious modifications of the reference. According to the statement of rejection, the missing multiple-component ("at least two") structure allegedly would have been an obvious modification of Josic in view of the teachings of Frechet, and the missing multimodal pore size distribution allegedly would have been an obvious modification of Josic in view of the teachings of Afeyan. More precisely, the rejection maintains that (a) one skilled in the art would have been motivated to combine Josic and *Frechet* "because Frechet . . . (column 2, lines 22-34 and column 6, lines 7-25) discloses that it is advantageous to have steps of different chemical composition" and (b) one skilled in the art would have been motivated to combine Josic and Afeyan because "Afeyan . . . (column 16 lines 3-18 and column 7, lines 46-50) discloses that use of a multimodal pore structure in a membrane-like structure increases surface area" (Office Action, sentence bridging pages 2 and 3).

Contrary to the aforesaid allegations, set forth in the statement of rejection, the person of ordinary skill in the art would not have arrived at the invention of rejected claim 30 (present claim 43) by combining the teachings of Josic, Frechet, and Afeyan. Moreover, however, one skilled in the art would *not* have been motivated to combine the teachings of Josic, Frechet and Afeyan as alleged in the statement of rejection, in a manner that would have rendered claim 30 (or the present

claims) unpatentable under § 103(a). Moreover, even if combined as alleged, the cited references would not have rendered claim 30 (or the present claim) unpatentable under §103(a).

The combined teachings of the cited references would not have rendered the presently claimed invention obvious under §103(a) because the secondary references (Frechet and Afeyan) fail to cure the admittedly fatal deficiencies in the primary reference (Josic).

Two passages of Frechet are relied on in the statement of rejection. The first passage (Frechet column 2, lines 22-34) reads (*emphasis added*):

> The continuous *macroporous polymer plug* of U.S. Pat. No. 5,334,310 is typically prepared as a homogeneously porous material that originates from a single polymerization mixture. In other words, *one plug* contains only one pore size distribution profile and only one composition and one type of functionality. In order to obtain different pore sizes and functionalities within one tube, *a plurality of different plugs* are used. Therefore, it would be a substantial advantage to develop a process that can be used *to produce a single plug with gradients of pore size distributions and/or chemistries that would also be of use in a variety of applications including liquid chromatography.*

As readily seen in the first passage, the teachings relied upon do not at all apply to a porous *tube* but, rather, a porous "*plug*." A "plug" is "a piece of material (as wood or alloy) used or serving to fill a hole: as the piece in a cock that can be turned to regulate the flow of liquid or gas b : an obstructing mass of material in a bodily vessel or opening" (online *Merriam-Webster Medical Dictionary* URL: http://www.nlm.nih.gov/medlineplus/mplusdictionary.html) (printout attached hereto). As opposed to a "plug," a "tube" is "a hollow, cylindrical body or passage" (online *Harcourt's Dictionary of Science and Technology* (previously made of record).

The passage of Frechet at issue does mention the word "tube," i.e.:

> In order to obtain different pore sizes and functionalities *within one tube*, a plurality of different plugs are used.

As such, the mentioned "tube" is not the *porous* structure but, rather, the structure "*within*" which the porous structure - the "macroporous polymer *plug*" - is formed. According to the Frechet invention the "tube" is a stationary "mold" within which material is polymerized to form the porous "plug" of the invention. As explained in Frechet column 2, lines 45-51 (*emphasis added*):

> The present invention is also directed to a process for making such a porous polymeric material. In the process, the porous polymeric material is formed in *a mold such as a stationary tube*, thereby forming a shaped integral body. Most preferably, *the body is generally cylindrical and referred to as a plug* useful in a separation apparatus, such as a chromatographic separation column.

The second passage relied upon (Frechet column 6, lines 7-25) does not even mention the word *tube*; it does, however, refer to a "porous polymeric material" and a "porous polymer body," each of which is identified with the "plug" discussed in Frechet (column 2, lines 45-51, quoted above).

The porous "plug" of Frechet is not analogous to the porous "tube 2" of Josic. What is more, there is no teaching or suggestion in either reference that one is interchangeable with the other. The PTO cannot take the teachings of Frechet out of context; the teachings of Frechet can not be relied upon as if they were applicable to any porous structure used in a chromatographic process. The PTO must take into account the fact that Frechet's teachings in connection with "*gradients of pore size distributions*," and such, are limited to limited to a solid, plug.

> It is impermissible within the framework of §103 to pick and choose from any one reference only so much of it as will support a given position, to the

> exclusion of other parts necessary to the full appreciation of what such reference fairly suggests to one of ordinary skill in the art.

In re Hedges, 228 USPQ 685, 687 (Fed. Cir. 1986). "One cannot use hindsight reconstruction to pick and choose among isolated disclosures in the prior art to deprecate the claimed invention." *In re Fine*, 5 USPQ2d 1596, 1600 (Fed. Cir. 1988).

The disclosure of Frechet is, also, limited to a gradient distribution *from one end to the other* of an integral body. This teaching, also, must be taken into consideration in the instant analysis under §103(a). *Hedges*, 228 USPQ at 687. *Fine*, 5 USPQ2d at 1600. Modifying "tube 2" of Josic in this manner would have created a different structure than that presently claimed, in which a gradient (if any) would be established in a cross-sectional manner, from the outer surface to the inner surface.

Afeyan adds nothing to make up for what is missing in Frechet. In fact, the word tube does not even appear in the reference.

Accordingly, applicants submit that none of Josic, Frechet, or Afeyan, taken alone or in combination, teaches or suggests the "self-supporting structure" of rejected claim 30 (present independent claim 43), i.e.:

- a column-like system with a channel running through the entire system ("a tube")
- made up of at least two porous units ("porous components A and B").
- one unit friction-fit inside the other ("component A fits in component B").

In this sense, it would appear that the rejection of claim 30 under § 103(a) relies on hindsight reconstruction.

In the present case, none of the cited references, taken alone or in combination, teaches or suggests the overall "tube" structure limitation of the presently claimed invention, nor do the references teach or suggest effecting the tube structure by coaxially arranging porous tubes in a self-supporting manner, as presently claimed. Limitations on the present claims being neither taught nor suggested in any of the cited references, obviousness of the present claims is not shown, *Royka, supra*, and withdrawal of the rejections at issue under §103(a) is in order.

Moreover, with respect to present "article" claims 53-62, the teachings of the cited references are even further removed. Frechet teaches (column 2, lines 36 et seq)

> a porous polymeric material having a porous polymer matrix in the form of an integral body with a first end and a second end, said porous polymer matrix having a property gradient extending from the first end of the integral body to the second end thereof. The property gradient is generally a pore size distribution gradient, a chemical composition gradient, or a combination of the two.

From these teachings it becomes evident that a skilled person would have never conceived of the self-supporting structure (of claim 43) disposed in the "housing"of "article" claims 53-62. Thus, present claims 53-62 are independently patentable over the cited references.

Favorable action is requested.

Respectfully submitted,

JACOBSON HOLMAN PLLC

By: William E. Player
William E. Player
Reg. No.: 31,409

400 Seventh Street, N.W., Suite 600
Washington, D.C. 20004
Tel. (202) 638-6666
Fax (202) 393-5350
Date: September 4, 2003
WEP:bap
C:\Documents and Settings\wplayer\Local Settings\Temp\P65728US0 amd.wpd